

International Application No. PCT/EP2004/011132
Attorney Docket No. GIER3007/JEK
Preliminary Amendment

effect in a foreign country which is different and unintended under U.S. practice (i.e., changing “consisting of” to “comprising”); (v) to remove or amend original claim language that could be regarded as alternative expressions that are acceptable under foreign patent practice but possibly subject to objection under U.S. practice, typically having a broadening or neutral effect in the amended claim; and/or (vi) to improve the clarity or meaning of the original language.

In the case of amendments effectively changing an original claim element expressed as a “means plus function” that could raise a presumption of claim expression under 35 U.S.C. 112, 6th paragraph to a structural expression or to an expression removing the presumption of a “means-plus-function” statement, it is not intended to narrow the claim so amended for purposes of patentability, but rather to place the claim in a form considered to be intended by the applicant from a foreign country where claim limitations described in terms of means-plus-function do not have the same effect as under U.S. practice. Thus, such amendments are intended to establish a full range of equivalents to the claim elements so amended under the U.S. doctrine of equivalents and beyond the range associated with “means-plus-function” expressions according to 35 U.S.C. 112, 6th paragraph, just as if the claim so amended was presented originally in its amended form.

All rights are reserved to the original disclosed and claimed subject matter and any cancellation of claims is made without prejudice or disclaimer.

LIST OF CURRENT CLAIMS

1. (Currently Amended) A document of value, comprising in particular bank note, with at least one pair of luminescent substances associated to each other and including having a first and a second luminescent substance, said substances emitting which emit in a joint emission region located outside the visible spectral region, wherein the emission spectra of the first and second luminescent substance in at least a partial area of the said emission region overlap in such a way[[,]] that the emission spectrum of the first luminescent substance is characteristically complemented by the emission spectrum of the second luminescent substance.
2. (Currently Amended) The document of value according to claim 1, wherein characterized in that the said emission region is in the range selected from the group consisting of about 750 nanometers to about 2500 nanometers; preferably about 800 nanometers to about 2200 nanometers; and, especially preferred about 1000 nanometers to about 1700 nanometers.
3. (Currently Amended) The document of value according to claim 1, wherein or 2, characterized in that the first and/or second luminescent substance is formed on the basis of a doped host lattice.
4. (Currently Amended) The document of value according to claim 1, wherein one or both of at least one of claims 1 to 3, characterized in that the first and and/or second luminescent substance is or are formed on the basis of a host lattice doped with rare earth elements.
5. (Currently Amended) The document of value according to claim 4, wherein characterized in that the host lattice is doped with one or more of elements selected from the group consisting of neodymium, erbium, holmium, thulium, ytterbium, praseodymium, and dysprosium or a combination of these elements.

6. (Currently Amended) The document of value according to claim 1, wherein one or both of at least one of claims 1 to 5, characterized in that the first and and/or second luminescent substance is or are formed on the basis of a host lattice doped with a chromophore, the chromophore being selected chosen from the group consisting of scandium, titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper and zinc.

7. (Currently Amended) The document of value according to claim 6, wherein characterized in that at least one of the host lattices is doped with a plurality of chromophores.

8. (Currently Amended) The document of value according to claim 3, wherein at least one of claims 3 to 7, characterized in that at least one of the host lattices is formed by a mixed crystal.

9. (Currently Amended) The document of value according to claim 3, wherein at least one of claims 3 to 8, characterized in that the first and the second luminescent substance are formed on the basis of different host lattices, which have differently strong crystal fields and which each are doped with the same dopant.

10. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 9, characterized in that the said partial area, in which the emission spectra of the first and second luminescent substance complementary overlap each other, has a width selected from the group consisting of 200 nanometers or less, preferably; and 100 nanometers or less.

11. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 10, characterized in that the said partial area[[,]] in which the emission spectra of the first and second luminescent substance overlap each other[[,]] is in a the range selected from the group consisting of about 850 nanometers to about 970 nanometers; or about 920 nanometers to about 1060

nanometers; or about 1040 nanometers to about 1140 nanometers; or about 1100 nanometers to about 1400 nanometers; preferably about 1100 nanometers to about 1250 nanometers; especially preferred about 1120 to about 1220 nanometers; or about 1300 nanometers to about 1500 nanometers; and, or about 1400 nanometers to about 1700 nanometers.

12. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 11, characterized in that the first and the second luminescent substance in the said partial area each have at least one emission line, the positions of which have a distance selected from the group consisting of about 30 nanometers or less; preferably about 20 nanometers or less; and, especially preferred about 10 nanometers or less.

13. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 12, characterized in that the document coding contains a further luminescent substance[[,]] which has at least one emission line located outside the said partial area.

14. (Currently Amended) The document of value according to claim 13, wherein characterized in that the at least one emission line lies outside the visible spectral region, the emission line preferably lying in the infrared spectral region above 1100 nanometers.

15. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 14, characterized in that the document coding has a plurality of said pairs of luminescent substances associated to each other, as stated in the claims 1 to 14.

16. (Currently Amended) The document of value according to claim 15, wherein characterized in that the partial areas[[,]] in which the emission spectra of the first and second luminescent substance of a pair complementary overlap each other[[,]]

are different for different pairs of luminescent substances associated to each other.

17. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 16, characterized in that at least one of the luminescent substances is printed onto the document of value.

18. (Currently Amended) The document of value according to claim 17, wherein characterized in that a plurality of luminescent substances are jointly printed onto the document of value in one printing ink.

19. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 18, characterized in that the document of value comprises as a substrate a printed or unprinted cotton paper.

20. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 19, characterized in that the document of value comprises as a substrate a printed or unprinted plastic foil.

21. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 20, characterized in that at least one of the luminescent substances is incorporated in the volume of the document of value, in particular of a the substrate of the document of value.

22. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 21, characterized in that the pair or the pairs of luminescent substances associated to each other are provided in geometrically arranged areas on or in the document of value.

23. (Currently Amended) The document of value according to claim 1, wherein at least one of claims 1 to 22, characterized in that the at least one pair of luminescent substances associated to each other forms a coding on or in the document of value.

24. (Currently Amended) The document of value according to claim 23, wherein characterized in that the coding represents an information about the document of value, the information being provided in one of encrypted and [[or]] unencrypted form.
25. (Currently Amended) A method for manufacturing a document of value, comprising: according to one of claims 1 to 24, characterized in that the providing a document of value is provided with at least one pair of luminescent substances associated to each other[,,] and which emit in a joint emission region located outside the visible spectral region, wherein the emission spectra of the first and second luminescent substance in at least a partial area of the said emission region overlap in such a way[,,] that the emission spectrum of the first luminescent substance is complemented by the emission spectrum of the second luminescent substance.
26. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein characterized in that at least one of the luminescent substances is added to the document of value during papermaking.
27. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein or 26, characterized in that at least one of the luminescent substances is added to a printing ink and is applied onto the document of value with the printing ink.
28. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein at least one of claims 25 to 27, characterized in that at least one of the luminescent substances is applied onto the document of value by a coating process.
29. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein at least one of claims 25 to 28, characterized in that

at least one of the luminescent substances is added via respectively prepared mottled fibers during papermaking.

30. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein at least one of claims 25 to 29, characterized in that at least one of the luminescent substances is added via a respectively prepared security thread or security strip during papermaking.

31. (Currently Amended) The method for manufacturing a document of value according to claim 25, wherein at least one of claims 25 to 30, characterized in that at least one of the luminescent substances is applied onto the document of value, in particular adhesively bonded, via a respectively prepared self-supporting transfer element, such as a patch or label.

32. (New) The document of value according to claim 14, wherein the emission line lies in the infrared spectral region above 1100 nanometers.